CLAIMS

1. (Currently Amended) An apparatus for current leakage correction coupled to a leaky capacitor, wherein the leaky capacitor is connected to ground, comprising:

a scaled capacitor, wherein the scaled capacitor has an area reduced by a scaling factor in comparison to the leaky capacitor; and

a plurality of current mirrors, wherein the plurality of current mirrors further comprise:

at least one <u>first</u> current mirror is at least configured to be coupled to the leaky capacitor; and

at least one <u>second</u> current mirror is at least configured to be coupled to the scaled capacitor that is at least configured to provide a potential difference across the scaled capacitor that is substantially equal to a potential difference across the leaky capacitor <u>minus</u> the potential difference across the at least one second current mirror.

- 2. (Original) The apparatus of Claim 1, wherein the plurality of current mirror further comprises a plurality of transistors.
- 3. (Original) The apparatus of Claim 1, wherein the plurality of current mirrors further comprises a plurality of Field Effect Transistors (FET).
- 4. (Original) The apparatus of Claim 3, wherein at least one FET of the plurality of FETs is a Positive-Channel FET (PFET), wherein the PFET is at least configured to inject current into the leaky capacitor to compensate for a current leak.

- 5. (Original) The apparatus of Claim 4, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).
- 6. (Original) The apparatus of Claim 3, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).
- 7. (Original) The apparatus of Claim 1, wherein the plurality of current mirrors further comprise a plurality of bipolar transistors.
- 8. (Original) The apparatus of Claim 1, wherein the plurality of current mirrors further comprise a plurality of Metal-Oxide Semiconductor FETs (MOSFETs).
- 9. (Original) The apparatus of Claim 8, wherein at least one MOSFET of the plurality of MOSFETs is a Positive-type MOSFET (P-type MOSFET), wherein the P-type MOSFET is at least configured to inject current into the leaky capacitor to compensate for a current leak.
- 10. (Original) The apparatus of Claim 9, wherein at least one FET of the plurality of FETs is a Negative-type MOSFET (N-type MOSFET).
- 11. (Original) The apparatus of Claim 8, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).

12. (Currently Amended) A method for current leakage correction for a leaky capacitor, wherein the leaky capacitor is connected to ground, comprising:

measuring voltage across the leaky capacitor;

providing the measured voltage to a scaled capacitor, wherein the scaled capacitor has an area reduced by a scaling factor in comparison to the leaky capacitor; and providing a sustaining charge to the leaky capacitor.

- 13. (Original) The method of Claim 12, wherein the step of providing the measured voltage to a scaled capacitor further comprises utilizing a plurality of current mirrors with an adjusted width and length to provide the measured voltage to the scaled capacitor.
- 14. (Currently Amended) A computer program product for current leakage correction for a leaky capacitor in a computer system, wherein the leaky capacitor is connected to ground, the computer program product having a medium with a computer program embodied thereon, the computer program comprising:

computer code for measuring voltage across the leaky capacitor;

computer code for providing the measured voltage to a scaled capacitor, wherein the scaled capacitor has an area reduced by a scaling factor in comparison to the leaky capacitor; and computer code for providing a sustaining charge to the leaky capacitor.

15. (Original) The computer program product of Claim 14, wherein the computer code for providing the measured voltage to a scaled capacitor further comprises computer code for

utilizing a plurality of current mirrors with an adjusted width and length to provide the measured voltage to the scaled capacitor.

16. (Currently Amended) A circuit for current leakage correction coupled to a leaky capacitor, wherein the leaky capacitor is connected to ground, comprising:

a scaled capacitor, wherein the scaled capacitor has an area reduced by a scaling factor in comparison to the leaky capacitor; and

a plurality of current mirrors, wherein the plurality of current mirrors further comprise:

at least one <u>first</u> current mirror is at least configured to be coupled to the leaky capacitor; and

at least one <u>second</u> current mirror is at least configured to be coupled to the scaled capacitor that is at least configured to provide a potential difference across the scaled capacitor that is substantially equal to a potential difference across the leaky capacitor <u>minus</u> the potential difference across the at least one second current mirror.

- 17. (Original) The circuit of Claim 16, wherein the plurality of current mirror further comprises a plurality of transistors.
- 18. (Original) The circuit of Claim 16, wherein the plurality of current mirrors further comprises a plurality of Field Effect Transistors (FET).

- 19. (Original) The circuit of Claim 18, wherein at least one FET of the plurality of FETs is a Positive-Channel FET (PFET), wherein the PFET is at least configured to inject current into the leaky capacitor to compensate for a current leak.
- 20. (Original) The circuit of Claim 19, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).
- 21. (Original) The circuit of Claim 18, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).
- 22. (Original) The circuit of Claim 16, wherein the plurality of current mirrors further comprise a plurality of bipolar transistors.
- 23. (Original) The circuit of Claim 16, wherein the plurality of current mirrors further comprise a plurality of Metal-Oxide Semiconductor FETs (MOSFETs).
- 24. (Original) The circuit of Claim 23, wherein at least one MOSFET of the plurality of MOSFETs is a Positive-type MOSFET (P-type MOSFET), wherein the P-type MOSFET is at least configured to inject current into the leaky capacitor to compensate for a current leak.
- 25. (Original) The circuit of Claim 24, wherein at least one FET of the plurality of FETs is a Negative-type MOSFET (N-type MOSFET).

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- 26. (Original) The circuit of Claim 23, wherein at least one FET of the plurality of FETs is a Negative-Channel FET (NFET).
- 27. (New) An apparatus for current leakage correction coupled to a leaky capacitor, wherein the leaky capacitor is connected to ground and a current source that is in a non-conducting high impedance state, comprising:

a scaled capacitor, wherein the scaled capacitor has an area reduced by a scaling factor in comparison to the leaky capacitor; and

a plurality of current mirrors, wherein the plurality of current mirrors further comprise:

at least one first current mirror is at least configured to be coupled to the leaky capacitor;

at least one second current mirror is at least configured to be coupled to the scaled capacitor that is at least configured to provide a potential difference across the scaled capacitor that is equal to a potential difference across the leaky capacitor minus the potential difference across the at least one second current mirror;

wherein the at least one first current mirror further comprises at least one transistor that is at least configured to inject current into the leaky capacitor; and

wherein the at least one second current mirror further comprises at least two paired transistors in parallel that are at least configured to apply current leakage compensation.